DVN-I
Automotive Interior

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Editorial

Automobile Disruption Is Still A Ways Away

Last week's Car of the Year 2021 verdict came as a surprise. The Toyota Yaris is an excellent product, which has matured since its first Car of the Year award in 2000. The jury recognized its efficient 3-cylinder hybrid system and its refinement in safety, perceived quality, and comfort. What's particularly interesting is that this Japanese-brand, French-made, combustion-engine car won out over EVs like the Fiat 500 and VW ID.3—vehicles widely liked and praised by governments, industry leaders and media. The Yaris is a regular, normal vehicle with a regular, normal interior. New norms are busily being built, as you can read each week here in the DVN-Interior Newsletter, but the old norms still have a lot of tread left on their tires. Automotive disruption is coming, but maybe not all that fast.

Meanwhile, innovations carry on apace. Driver monitoring systems are on the front line of essential automotive features. They're of key importance even with regular, normal, human-driven vehicles. This week's in-depth report looks at infrared technology as one of the most cost-effective methods of keeping electric eyes on the driver.

We're glad you're with us in the DVN Interior community! If you haven't yet, come and **join us here**.

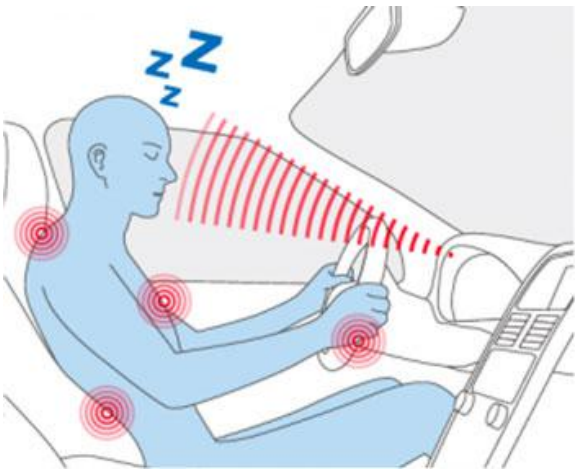
Sincerely yours,

Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

In-Vehicle Sensing: Infrared Driver and Occupant Monitoring

In today's automobiles, digital high-resolution touchpads have replaced analog gauges and knobs. Modern smart lighting adjusts to changing conditions. Radios have been replaced with multifunctional touch-sensitive infotainment displays. HUDs are becoming standard equipment. And sensors are everywhere, populating car interiors as well.



Development work on autonomous vehicles and advanced driving assistants has provided new, more granular views of the scenarios and factors that can lead to crashes, while simultaneously propelling development of technology to address these scenarios, and as a byproduct of sorts the industry recognizes drowsiness and vigilance issue are major safety concerns in human-driven vehicles.

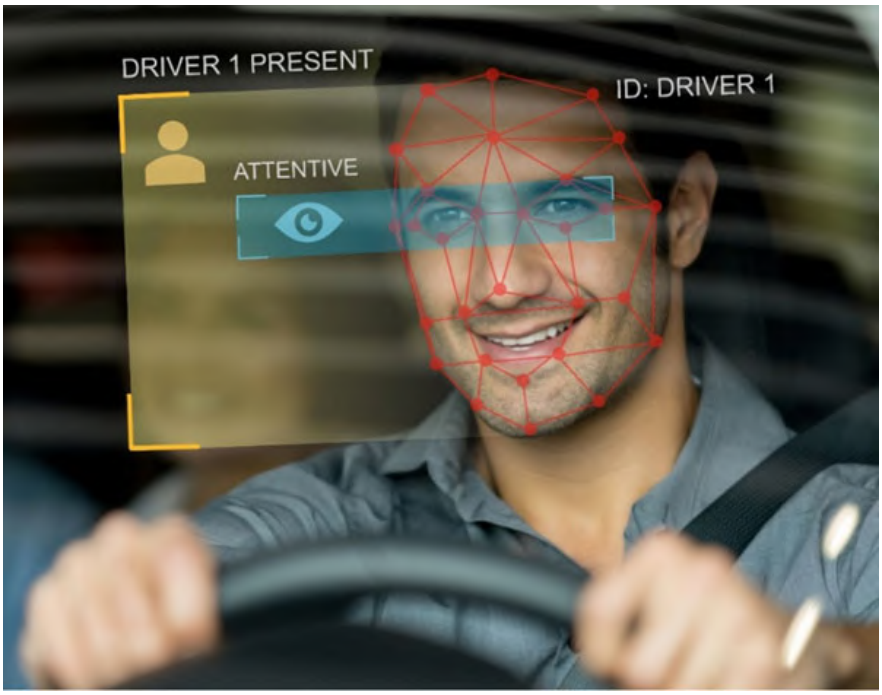
There is generally a strong emphasis on safety awareness in new vehicle systems development. Driver distraction is a primary concern right now, as partially-autonomous vehicles mean much greater opportunity and incentive for drivers to take their focus off the road. Recent events are emphasizing the issue, such as Tiger Woods' recent crash (the causes of which are still unknown).

And it's not only the driver, but passengers as well. Automakers are devising their own standards to look at how many people are in the car, where and how they're positioned, whether a child is left behind in a car if the driver leaves, and otherwise like that.

At the legislative level, there are regulations emerging both in America and in Europe. These include the EU General Safety Regulation that requires DMS (Driver Monitoring Systems) in new vehicles as of 2022, and the SAFE (Stay Aware for Everyone) Act of 2020 that is similarly aimed at installing DMS in future vehicles in the USA. So, in-vehicle sensing is a new growth market as these systems haven't been applied in many vehicles on a global scale yet. If you look at the German and Japanese premium vehicles at the top of the high-end segment, for example, in-vehicle sensing systems have been present for over 10 years in some cases. But these have been the rare exception until recently.

SUBARU DRIVERFOCUS WITH CAMERA AND NIR SOURCE TO TRACK DRIVER GAZE (IMAGE: PLANET SUBARU)

DMS is gradually shifting and drifting onto the list of basic safety equipment along with brakes and side mirrors. The risk of driver distraction is increasing—looking at smartphones, operating in-car infotainment systems with menus, submenus, and sub-sub-submenus, talking on the phone with its severe cognitive load despite hands-free hardware, talking to the passengers, and many more distractions are growing, especially with more automated driving.



More broadly than just driver monitoring, occupant monitoring systems (OMS) keep track of passenger presence and position, look out for children left behind, and along with the safety aspect, systems like his facilitate value-adds such as occupant identification for vehicle personalization and other luxury applications (welcome, comfort, light, audio, etc). Automakers can leverage sensing technology to add these enhancements in the future, with the regulation of DMS and OMS moving us further in this direction.

Monitoring systems that use near-infrared light (NIR, wavelengths outside of human visual perception) provide unobtrusive remote sensing of a person's presence, pupil position, and gaze; eyelid movement, and other indicators of driver alertness and occupant safety. These systems are rapidly being implemented into new vehicles, with NIR light source output a critical parameter for system performance. There's a variety of implementation areas in the interior: along the headliner of the car, in the vehicle steering wheel column, in the center stack column, and throughout the cabin.

Various technologies are used to provide data for sensing. In the case of light-based systems, these are typically NIR VCSELs, IREDs (infrared-emitting diodes, or "IR LEDs") and IR cameras that monitor drivers or occupants within the vehicle.

But there are other types of in-vehicle sensors as well: thermal and infrared sensors, which monitor people's heat signatures, for example. There are also steering wheel sensors that can, in a basic sense, monitor pressure indicating driver control, or go beyond this with EKG functions to monitor heart rate. Other health and biometric monitoring systems include radar for detecting respiration and heart rate, for both the DMS and OMS applications.

Radiant Vision Systems, based in Redmond, Washington (**video**) has been a part of Konica Minolta's Sensing business unit since August of 2015. As a light-measurement provider, Radiant focuses on solutions for sensing technologies that use NIR light sources in conjunction with IR cameras. Primary applications include tracking eye and pupil detection, monitoring driver position, recognizing gestures, and detecting occupant presence throughout the vehicle.

They recently launched a unique camera/lens solution geared toward measuring near-infrared emitters, like LEDs and lasers used in near-IR sensing systems. They call it their "NIR Intensity Lens", and it's a conoscope lens applied in combination with a radiometric imager. This Fourier-optic solution attaches directly to an imaging system to measure the angular emission of a light source with optimal efficiency. What's interesting about the lens is that it was originally developed it for the consumer electronics market, where near-IR is the primary wavelength for facial recognition—and, true to form, what happens in the consumer electronics market eventually bleeds over into automotive.

RADIANT VISION SYSTEMS' NIR INTENSITY LENS

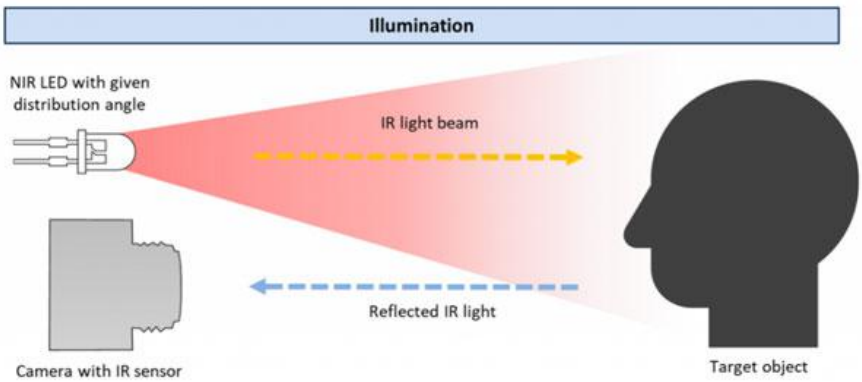
The first automotive NIR applications in the 2010s were integrated in the steering column, basically at the 12 o'clock signature line. They were typically using 890-nanometer light sources at that time, causing distracting visible deep red lights in direct view of the driver, especially at night.

Today's NIR light sources use longer wavelengths, in the 930-950nm range. That means less interference from ambient sunlight, and the light is essentially invisible to the human

eye.

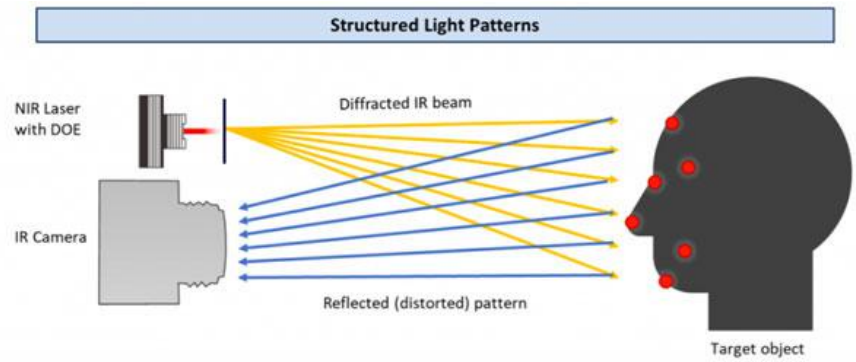
NIR LIGHT PROVIDES LIGHT FOR IR CAMERAS IN CIPIA'S DRIVER SENSE DMS; SEE DVN-I 4 FEB 2021 (IMAGE: CIPIA)

Most in-vehicle sensing applications can be accomplished sufficiently with LEDs, they produce a wide distribution of light that allow IR cameras to 'see' more of the interior, and these light sources can be implemented much more cost-effectively than lasers.



NIR LEDS PROVIDE ILLUMINATION FOR IR CAMERAS. (IMAGE: RADIANT)

If there's a need to identify real 3D qualities of an object, lasers with DOE (diffractive optical elements) offer greater precision because they can produce specific patterns with thousands of discrete points of information. Deformations in the reflected pattern are interpreted by the sensing system to create a map of the 3D surface with accurate depth and shapes. That's key for facial recognition. If you are looking "only" to monitor relative eye, head and body positions indicating user distraction (as in DMS), LED sources are still the best-suited, most affordable choice.



NIR LASERS FOR FACIAL RECOGNITION, USING STRUCTURED LIGHT PATTERNS (IMAGE: RADIANT)

To make measurement completely safe, there's a need to verify the driver's face has sufficient NIR light intensity and coverage. The IR built-in cameras must reliably detect light reflected off the driver or occupants, within the wavelength range beyond visible spectrum (750 nm) up to 1,050 nm, and with the appropriate distribution and intensity.

Radiant products include TrueTest™ automated visual inspection systems for measurement

and control, ProMetric® imaging colorimeters and photometers, source imaging goniometer® systems, lenses for view angle performance measurement, and an extensive machine vision software tool library for production-level measurement and control.

These light measurement solutions can be used for evaluating traditional instrument cluster and center stack backlit icons like an HVAC or volume control, or more advanced systems like HUDs—both conventional and augmented-reality; as well as the light-based sensing like NIR DMS and OMS.

Another field of application will be display for passenger and driver side doors, supplanting traditional sideview mirrors, and instead using cameras giving a much larger field of view of the outside of the vehicle to reduce blind zones.

AUDI E-TRON CONCEPT, 2018 SIDE DOOR REAR VIEW DISPLAY (IMAGE: AUDI)

Augmented reality is the next big step. If the head-up display integration, where the entire windshield basically acts as a sensor-based display, with virtual images dynamically responding to external elements such as pedestrians, vehicles, stores, restaurants, or any points of interest. That information is going to be fed into the vehicle, and with that a lot more information is going to be thrown in the field of view of drivers and occupants, giving sensing an even more important role to play.

LIGHT-EMITTING COMPONENTS PROVIDE VEHICLE-INTERFACING CAPABILITIES FOR THE DRIVER AND PASSENGERS (IMAGE: RADIANT)

Interior News

Will Leather Interiors Vanish Before the ICE?

INTERIOR NEWS

IMAGE: BENTLEY

"You can't sell an animal-containing product like a Bentley, with 20 leather hides, to someone with a vegan lifestyle," Bentley's Director of Design Stefan Sielaff said a few years back at a Future of the Car Summit in London. That's surely a fact, and it raises the question of which will vanish first: leather interiors or internal combustion engines?

Several brands have already moved their interior premium material to no-animal leather, including BMW Mini, Toyota, Jaguar and Tesla. Tech-forward premium brands like Mercedes, Volvo, Volkswagen, Bentley, Land Rover, and Ford with their Mustang Mach-E are also moving to standard or optional vegan leathers. Seats covered in animal skin are starting to look a bit…weird. Though we typically associate the word "vegan" with a diet, the ethic now also applies to upholstery in cars.

Artificial leather started long ago, Mercedes used to trim interior with it ("Kunstleder"), just after World War 2, because of a resource-strapped environment. Today the descendant of that material is known as MB-Tex, a notoriously durable vinyl-based material. Market data says 55% of the leased Mercedes vehicles are chosen with MB-Tex.

Lexus probed the vegan trend early as well, making a few bespoke vegan Lexus models in 2006 at the request of proudly vegan Paul McCartney, whose tour it was sponsoring.

The Porsche Taycan offers a microfiber vegan upholstery called "Race-Tex" that presents as leather but which uses recycled polyester and generates 80% less CO_2 in its production.
The entire Toyota Prius line offers Sof-Tex synthetic leather or synthetic cloth upholstery to complement its sustainable credentials.

Artificial leather is lighter, less costly (it's mostly made from low-cost or recycled fibers), and of better visual quality. At Mercedes, they say: "Look at the door panels. If they are smooth, it's MB-Tex. If they are wrinkled, it's leather"!

For all these reasons, and as leather is part of a value chain with a giant carbon footprint, we can expect real leather to disappear before 2040-250 when ICE is expected to get definitively out of market.

Suspension Technology to Reduce Motion Sickness

INTERIOR NEWS

Carbon Air's activated carbon is fixed inside the pressurised cavity of the air spring, occupying space that would otherwise be occupied only by the air inside the chamber. (Carbon Air)

> "Our technology's novelty is ...on the mechanical behavior of the air surrounding it. It has never been used for this purpose before."

How about mitigating motion sickness with a non-interior component minimizing vibration in the vehicle? That's the approach of Carbon Air, a British materials company.

Carbon Air is planning further growth of applications for their "activated carbon" air suspension technology as shown in **this video,** following its use on current-generation Audi A6 and A7 models. Activated carbon is formed from organic carbon matter, typically made up of stock like coconut shells or sawdust.

Carbon Air was founded in 2011. The original idea came from activated carbon for loudspeakers. (improving the bass response of a loudspeaker by changing the behavior of air through a process called adsorption) Then they realized that activated carbon might be of great benefit in vehicle air springs. Carbon Air is funded by venture capital, the University of Salford, and private investors.

Looking further ahead, developers of autonomous vehicles have identified that nausea can affect passengers that are working, reading, or watching screens while the vehicle is underway, partly because of the way vehicles ride and take corners. Air suspension systems here can also help, by adjusting dynamic characteristics in real time, depending on the speed, the mass of the passengers and load being carried, and the road conditions.

In these air suspension applications, among a host of others, Carbon Air's activated carbon offers significant advantages: a more tunable and more linear response, as well as helping to reduce the packaging requirement of air suspension systems. And when the design engineer is required to tailor the performance of an existing spring to match a new requirement late in the development process of a vehicle—for example, when a heavy battery pack or an extra row of seats is added—then the addition of activated carbon can be a savior, allowing one spring to operate across a range of loading conditions.

Yanfeng touchFC Floor Console Concept

INTERIOR NEWS

Yanfeng has won a Good Design® Award for their touchFC floor console concept.

This is the second year in a row that Yanfeng has been awarded in the competition's Transportation Category, winning last year with the rideshare interior demonstrator, the Experience in Motion 2020 (XiM20).

The Chicago Athenaeum Museum of Architecture and Design and Metropolitan Arts Press Ltd. Present, since more than 70 years, the Museum's annual Good Design® Awards Program for the most innovative and cutting-edge industrial, product, and graphic designs produced around the world.

touchFC reflects how interiors must evolve in both the features they offer and the way people will interact with them. It acts as a functional hub, combining UV sanitization, smart surfaces, and storage with unique, experiential elements, like the dragonfly-inspired armrests."

To help keep the interior clean, touchFC includes UV and ionized air sanitizers. The air vent that serves the second row at the back of touchFC has an ionizer integrated to purify the air, absorbing dust, bacteria, and viruses. Below the air vent, also serving the second row, an electric storage box containing a UV sanitizer, which activates when closed, killing bacteria and viruses on the items stored inside. Both air vent and storage box are operated by controls built within the Crystal Deco, a durable smart surface material that gives touchFC a high-tech look and feel that is also easy to disinfect.

The integrated and intuitive Smart Button allows occupants to adjust the floor console's signature armrest for greater comfort. A phone docking station is integrated at the front of the touchFC for wireless charging and to keep personal devices accessible. At the end of the journey, the mobile phone is raised automatically out of the charging port for easy access, and as a reminder to not leave the device in the vehicle.

New Mercedes C-Class Interior at S-Class Level

INTERIOR NEWS

IMAGE: MERCEDES-BENZ

Mercedes has unveiled the new generation (W 206) of their C-Class. The mid-range model borrows a lot from the S-Class, particularly in the interior, and will be available this summer. A plug-in hybrid with an electric range of 100 kilometers will follow at the end of the year.

The further development is evolutionary. The C-Class grows in length by 65 millimeters to 4,751 millimeters. The width of the new generation measures 1.82 meters, while the height is reduced to 1,438 millimeters (-9 mm). The 2.5-centimeter increase in wheelbase creates more knee room for the rear-seat passengers.

The interior of the Mercedes C-Class clearly shows bigger changes. A large screen dominates the center console, similar to the new S-Class, nicely aligned with the wide center console. The lower section of the display is seamlessly connected to a switch panel that the driver and front passenger can use to operate climate control functions. The optional A4-sized display (11.9" diagonal) shows, for example, images of the vehicle's surroundings, as well as telephone and audio functions with favorites lists. In the basic version, the display is smaller at 9.5". Nevertheless, there is a button bar below the screen. This allows easy access to the driving modes, the parking assistant, the auxiliary heating or the volume control. A fingerprint sensor is also located here. The instrument cluster behind the three-spoke steering wheel is also digital; its design is also based on the current digital cockpits of the S- and E-Class.

IMAGE: MERCEDES-BENZ

Mercedes has also made a number of changes for passenger comfort. The massage function for the driver and front passenger has been improved, while rear passengers can enjoy heated seats for the first time. A color head-up display and a navigation view with augmented reality elements can be booked in as an option. Musical entertainment is provided as standard by the "Online Music" feature, which combines the major streaming providers and integrates them directly into the MBUX system. The optional Air Balance package filters and ionizes the interior air. Mercedes has given this wellness treatment to the C-Class, because the mid-range model gets the highest sales.

New Audi Q4 Sportback e-tron Interior

INTERIOR NEWS

AUDI Q4 SPORTBACK E-TRON CONCEPT: CLOSE-TO-PRODUCTION OUTLOOK FOR 2021 (IMAGES: AUDI)

Audi presented a coupé variant of the Q4 e-tron as a concept car, with a production version is to be launched this year as the seventh EV from the Audi brand. The Q4 e-tron concept gave an appetizer of Audi's first compact e-SUV at the real last Geneva Motor Show (2019). The dimensions of both Q4 models are almost identical, including a wheelbase of 2.77m, important to interior roominess (rear and trunk), and a pretty high roof for a Coupe for passenger headroom.

The interior of the Audi e-tron Sportback offers a mix of digital technologies and a high level of comfort. The Audi virtual cockpit and MMI support intuitive operation.

Behind the steering wheel is the Audi virtual cockpit display with the most important display elements for speed, charge status and navigation. A new feature is the large-format head-up display with augmented reality function. It can display important graphic information such as directional arrows for turning directly in the course of the road. Below it, there is a button bar for controlling the air conditioner.

Control panels designed as touch elements on the steering wheel spokes are used to select frequently used functions. The 12.3" touchscreen for displaying and operating infotainment

and vehicle functions is located centrally above the center console. You control MMI navigation plus with MMI touch response via two large displays in the center console. Thanks to touch response technology, you receive tangible feedback. The MMI is your access to Audi connect5. The offering includes e-tron-specific services such as the e-tron route planner, which shows you the best route to the next charging points.

The center console itself is designed as a storage area including a cell phone charging tray, because it has no functional elements such as the shift lever or handbrake actuation. Instead, there is a high-quality horizontal surface in which the selector button for the driving mode is integrated. In the doors, in addition to the classic lower storage area, there is now the option of placing bottles within easy reach in the specially shaped upper area.

The optional panoramic glass roof provides a light-flooded interior and an improved climate through improved ventilation.

The optionally available virtual exterior mirrors are flat carriers with an integrated camera system that digitally transmits images to high-contrast OLED displays on the doors. Even in the dark, you can see rear vehicles with sharp clarity. To adjust the desired field of view, you can move the image section by touch control.

Functions on Demand allows to purchase further applications, via myAudi OTA.

The Design Lounge

Platform Design Comparison of a BEV CUV, Part II

THE DESIGN LOUNGE

Last week's comparo of the Hyndai Ioniq 5 and Chevrolets Bolt EUV showed how a new BEV platform can differentiate compared to an adapted ICE platform. For this week's follow up, let us compare how the cockpits and UX/HMI/Displays define each vehicles overall ambience and design.

With the Ioniq 5, Hyundai has chosen a very light colorway for not only the interior materials but also the UX/HMI/Display that is clearly inspired by generations of Apple iPhones.

Chevrolet's approach, although also using two UX/HMI/Displays, is very traditional with a brow over the drivers display and the use of a black background and traditional dark colors for the cockpit and displays.

The use of this light colorway on the Ioniq 5 creates an ambience that is inspired by a home office/workstation environment. Although clearly driver-oriented, the overall feeling is crisp and clean; it inspires calm.

Dark, brooding and maybe more of a driver's environment, the interior for the Bolt EUV is dominated by the large center stack display area and tunnel console in a very traditional ICE manner.

The use of a lightly colored thin/flat UX/HMI/Display with lightly colored upper sections for the rest of the interior background of the Ioniq 5, has a freshness and friendly feeling. This is also enhanced with the ability to use lightly colored background screens on the UX/HMI.

Contrasting, the Bolt EUV uses the dark display backgrounds with high visibility contrasting colors. This feels more like a warning center for the driver that sacrifices friendliness for functionality.



These opposite design approaches can be seen with the design of the tunnel console. With the Ioniq 5, Hyundai has created an open multi-use storage area that can be shared by the driver and passenger, and slide away for access to the wide, flat floor.



By also including the PRNDL and associated driving functions into the Bolt EUV tunnel console, the potential driver and passenger use scenarios are limited and very traditional as used in most ICE vehicles.

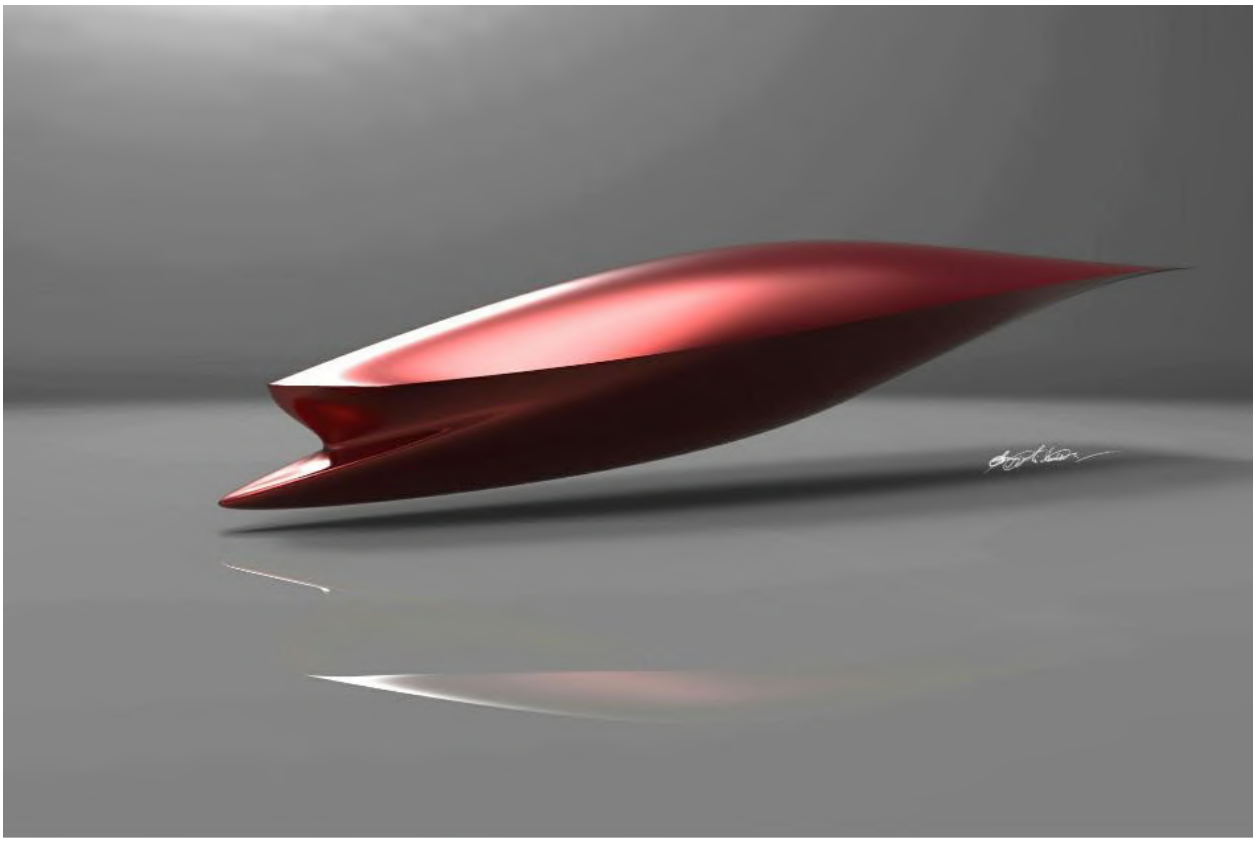
With Hyundai's' design approach, we can see a clear separation from the traditional ICE design interior usage and language that is focused on new BEV mobility solutions, including future vehicle autonomy.

It's is refreshing to see this fresh approach as this new design direction clearly dates all of the ICE based platforms, including Hybrid vehicles.

News Mobility

_Car interiors Unplugged

NEWS MOBILITY



SPEEDFORM ON MAZDA! REINVENTING THE KODO... FROM PINTEREST

9. In search of an epic, Part 2

(this story is part of an ongoing series introducing automotive interiors as an evolution of our habitat)

A digital twin is the generation or collection of digital data representing a physical object. In the enquiring case of mobility after a long evolution of semi-automated practices (rail, cruise control…) we achieved such a degree of connectivity and remote everything where any entity can be dialed by distance as a digital version of itself. In this remarkable, never seen before, parallel of virtual pathway vs real object-vehicle, technology allows complete autonomy or very nearly. With cars becoming 'less cars' and more integrators of multiple technologies, productive data centers and ultimately components of a larger mobility network, digital process converts into digital product. Seems though by time and practice we regain consciousness of the physical limits of the attempt, an aspect that manufacturing has been founded upon. With digital polyphony blurring into boundless overlaps, physicality reveals itself as a body coded to constantly reflect its environment and reboot the system every single time back to its original instructions.

From a mere rainwater drop attracted to the ground giving shape to motion to all sorts of mass moving horizontally once humans coped with the issue of friction, our relation to gravity to this day cannot be passed on, and this is linked to a form of motion. Each one of

us has to deal individually with own patterns and moves at any moment which is what generates a personalized reflex also known as 'character'. Thus unlike a digital twin, the physical one has to deal with inertia, acceleration, cornering and weight displacement, uphill and downhill, steering and breaking, all together in a different mix at the unit of time. As obvious as it may appear, these factors that act as physicality supervisors, have molded corresponding gestures, attitudes and silhouettes into mobile moving objects for eternity.

An entire motorized century has been sculpted into volumes, shapes and lines for just about every mobile temperament, descriptive of its proportions and its way of dealing with speed. We have adjusted our body stance accordingly, as an act of negotiating smoother transitions in space trading with any one single factor, individually or as a whole. This gave birth to a multitude of postures/types-of-motion, types of vehicles, symbols to the outside (berlins, coupes, hatchbacks, etc.) and within (rider, driver, pilot, passenger, co-driver etc.) defining objects, integrating environments and usage profiles. Car interiors are equally shaped 'by extraction' in some way within the overall volume to accommodate specific body attitudes: firm side bolsters for cornering, tall-wide and soft for comfort cruising, lots of low-empty and deep horizontal space with important levitating utility volumes for MPVs. We have lived up to expectations ranging from off-road and utility to cruising and racing, and now comes the time that we must create a new category of vehicles to accommodate for the least of the automotive of tasks. Meanwhile the adequate AV signature body-posture is not quite yet revealed, motion sickness episodes emphasize the obvious. However, with all our best intentions, skills and ambitions for the future of autonomous cars, during the first attempts we cannot help it but do a reality check and ask ourselves what comes next, what would really be the new form-attitude 'symbol' of the new era of mobility?

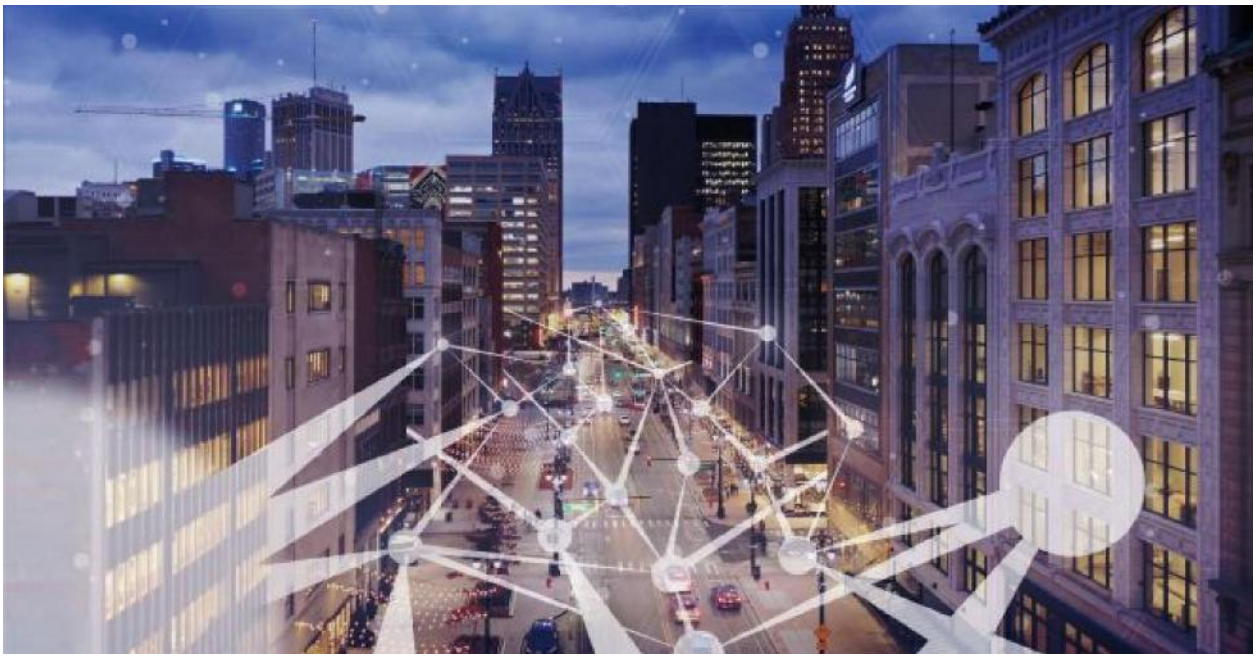
Notwithstanding motion sickness and toasters on wheels, our expectations are very high!

_to be continued…

_____*INDUSTRIOUS*__

NAIAS: Ban Non-Autonomous Vehicles From Smart Cities

NEWS MOBILITY



The North American International Auto Show (NAIAS) is expanding to provide a virtual global stage to hear from automotive and mobility industry leaders through monthly web-based series. During last Q'd Up Mobility briefing, Charity Rumery, head of automotive and industrial sales-Americas region, for mapping HERE Technologies said that manually driven vehicles should be banned from entering the autonomous urban highways of a future smart city.

The theme of this briefing was "Enhancing Road Safety with 5G", explaining that 5G, coupled with edge computing and access to the cloud, will play a vital role in improving road safety and accelerating the adoption of autonomous driving technology.

Rumery said, "You can close (the city) off for non-autonomous vehicles and then manage the autonomous vehicles seamlessly through the orchestration of the infrastructure and the V2X communications. You can also plan things like public transportation around that, so that you do have a mobility graph for each and every city footprint that's unique to that city but also optimized for the end consumer".

The result of this move could see all human-piloted vehicles, trucks, cars, motorcycles, bicycles being barred from entering the city highway infrastructure. Smart cities would allow public transport only, with the definition of that term expanded to include not only mass transit (buses and such) but also AVs interlinked by V2V, V2I and V2x communications.

VW ID.Buzz BEV Will Be VW's First AV

NEWS MOBILITY

Volkswagen has pledged that their ID.Buzz light commercial BEV will be the automaker's first fully autonomous vehicle. It makes a lot of sense as an L^5 AV fits best with parameters of public transport (several users, 24/7 operation, low speed).

VW ID BUZZ 2018 CONCEPT INTERIOR

It will be produced by Volkswagen Commercial Vehicles (Volkswagen Nutzfahrzeuge-NF), and the vehicle has only been seen in concept prototype form so far. The plan is now to start commercial autonomous operations in real-world traffic in 2025.

Christian Senger, the company's head of autonomous driving, says "This year, for the first time, we are conducting field trials in Germany, in which the self-driving system by Argo AI will be used in a version of the future ID.BUZZ…the aim is to develop a ride-hailing and pooling concept similar to what MOIA offers today. In the middle of this decade, our customers will then have the opportunity to be taken to their destination in selected cities with autonomous vehicles".

As part of their cooperation, Ford and VW-NF have invested equally in autonomous software company Argo AI with the goal of consistent and fast development and use of autonomous systems. In addition to the initial investment of $1bn, Volkswagen also brought their subsidiary AID (Autonomous Intelligent Driving) into Argo AI. VW-NF will now develop and build special purpose vehicles, such as robo-taxis and vans.

General News

Toyota Yaris is European Car of the Year 2021

GENERAL NEWS

The 4th-generation Toyota Yaris has been crowned Car of the Year 2021. The award ceremony took place in Geneva on 1 March, and was broadcast live on the Geneva International Motor Show website, whose team organized the ceremony for the tenth year in a row.

A 59-member jury comprising automotive journalists from 22 European countries selected the winner from seven models that had made it to the round of finalists in the first round of voting. Car of the Year has been presented since 1964. Jury President Frank Janssen called the Yaris "a worthy winner of this year's election, [which] deservedly prevailed against six top-class competitors".

The Yaris 1st Generation won the award in 2000. The interior design is typically Toyota: solid and practical, good value for money, though with little sparkle or pizazz. The entry-level Icon trim includes adaptive cruise control, air conditioning, a reversing camera, a multifunction leather-trimmed steering wheel, and enhanced safety equipment. A HUD is available for the Yaris Launch Edition. The Yaris' infotainment system is mounted high on the dash, and has a 7" touchscreen with Bluetooth, a DAB radio and Apple CarPlay and Android Auto connectivity. Design-spec cars include a larger 8" display and moving further up the range sees the addition of a JBL premium audio system with eight speakers.

In Europe, the new Yaris is the first car to be tested by Euro NCAP with all-new frontal offset test and counter-measure for injuries in far-side impacts by a mobile progressive deformable barrier test.

BYD DiLink, Aurora Mobile Team Up on EV Digital Upgrade

GENERAL NEWS

Aurora Mobile, a Chinese mobile developer service provider, says they have entered partnership with BYD DiLink, intelligent connected systems brand, part of automaker BYD, to co-promote the digital upgrade for the EV industry.

Founded in 2011, Aurora Mobile is providing efficient and stable push notification, one-click verification and App traffic monetization services to help developers improve operational efficiency.

BYD has sold more than 910,000 EVs. In addition, BYD has independently developed DiLink, one of the most well-known ICV (Intelligent and Connected Vehicles) systems in China, and was the first Chinese auto brand to offer over-the-air (OTA) upgrades.

As digital emerging technologies like cloud-based platforms, AI, big data, intelligent manufacturing have become key and automakers are quickening their digital transition and upgrade.

Under the agreement, Aurora Mobile will make use of its AI-driven targeted push notification services and the machine-learning-powered capabilities like the intelligent analysis of operational data and deep insight into users' behaviors to help BYD DiLink better grasp users' demands and improve user experience by offering safe, smarter and user-friendly smart mobility services.

The collaboration with BYD DiLink complements other strategic move forward for Aurora Mobile in EV and IoV (Internet of Vehicles) industries following the partnerships with EV manufacturers including WM Motor, Niu Technologies, Dongfeng Motor and JMEV.